

Predictability of the Swiss Stock Market with Respect to Style

DISSERTATION

of the University of St. Gallen,
Graduate School of Business Administration,
Economics, Law and Social Sciences (HSG)
to obtain the title of
Doctor of Philosophy in Management

submitted by
Patrick Scheurle
from
Oberrieden (Zurich)

Approved on the application of
Prof. Dr. Klaus Spremann
and
Prof. Dr. Andreas Griiner

Dissertation no. 3738

Gabler Verlag Wiesbaden, 2010

Contents

Preface.....	V
Overview of Contents.....	VII
Contents.....	IX
Executive Summary.....	XIII
Executive Summary (German).....	XIV
List of Figures.....	XV
List of Tables.....	XVII
Notations and Abbreviations.....	XXI
1. Introduction.....	1
1.1. Motivation.....	1
1.2. Research Idea.....	2
1.3. Outline.....	5
2. Literature Review.....	6
2.1. Structure of Literature Review.....	6
2.2. Factor-Mimicking Portfolios and Macroeconomics.....	7
2.3. Literature on Return Predictability.....	10
2.3.1. Macroeconomic Variables.....	10
2.3.2. Valuation Ratios.....	11
2.3.3. Accounting Data.....	13
2.3.4. Calendar Anomalies.....	14
2.3.5. Serial Correlation and Momentum.....	15
3. Return Predictability and the Real Economy.....	19
3.1. Efficient Market Hypothesis.....	19
3.2. Random Walk.....	20
3.3. Predictability and Cyclical Risks.....	23
3.3.1. Does the Efficient Market Hypothesis Hold?.....	23
3.3.2. Time-Varying Risk Premia.....	24
3.3.3. Investors and Return Predictability.....	27
3.4. Style Investing.....	28

3.4.1.	Approaches for the Allocation of Funds.....	28
3.4.2.	Reasons for Emerging and Vanishing Styles.....	29
3.4.3.	Reasons for Following Style Investing.....	30
3.4.4.	Risks and Reward of Style-Based Investment Strategies.....	30
4.	Study Design and Data.....	33
4.1.	Research Methodology.....	33
4.2.	Data.....	34
4.3.	Construction of Fama-French Portfolios	35
4.4.	Descriptive Statistics.....	37
5.	Empirical Part I - Testing for Predictability.....	47
5.1.	Hypothesis I.....	47
5.2.	Autocorrelation Coefficients and Variance Ratios.....	47
5.3.	Results.....	57
5.3.1.	Autocorrelation Coefficients.....	57
5.3.2.	Variance Ratios.....	72
5.4.	Summary of Empirical Parti.....	77
6.	Forecasting Models.....	79
6.1.	Implied and Estimated Cross-Autocorrelation.....	79
6.2.	Basic Forecasting Models.....	88
6.3.	Robustness and Possible Refinements.....	92
7.	Empirical Part II - Investment Strategies.....	96
7.1.	Hypothesis II.....	96
7.2.	Overview.....	96
7.3.	Calibration Windows and Investment Process.....	97
7.4.	Performance Measurement.....	100
7.5.	Style Rotation Strategies-4 Style Portfolios.....	103
7.5.1.	Fixed Predictor Portfolios.....	103
7.5.2.	Changing Predictor Portfolios.....	113
7.6.	Style Rotation Strategies - 6 Style Portfolios.....	121
7.6.1.	Fixed Predictor Portfolios.....	121
7.6.2.	Changing Predictor Portfolios.....	130
7.7.	Summary of Empirical Part II.....	137

8. Conclusion.....	139
8.1. Summary of Findings.....	139
8.2. Implications for Practice.....	143
8.3. Research Outlook.....	144
Appendix.....	145
A1. Variance Ratios (q=4).....	145
A2. Style Rotation Strategies (1a to 3b) vs. SMALL.....	147
A3. Style Rotation Strategies (4a to 6b) vs. SMALL.....	148
A4. Style Rotation Strategies (1.a_6 to 3b_6) vs. SFL.....	149
A5. Style Rotation Strategies (4a_6 to 6b_6) vs. SH.....	150
References.....	151